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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,245	05/18/2001	Keiichi Kitagawa	L9289.01138	3980

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EXAMINER	
HUANG, WEN WU	
ART UNIT	**PAPER NUMBER**
2682	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/856,245	KITAGAWA ET AL.	
	Examiner	Art Unit	
	Wen Huang	2682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-19,21,29 and 30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *17* is/are allowed.

6)☒ Claim(s) *18,19,21,29 and 30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 May 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 18, 19, 29 and 30 are rejected under 35 U.S.C. 102(a) as being anticipated by Takeuchi et al. (US. 5,907,563; hereinafter "Takeuchi")

Regarding **claim 18**, Takeuchi teaches a transmitting apparatus (see fig. 7, component 71) used in a mobile communication system to transmit a signal by radio to a communicating party (see col. 1, line 13), the transmitting apparatus comprising:

a symbol rate determiner that determines a symbol rate (see fig. 1, component 25; "INTERLEAVING PARAMETERS", and col. 5, lines 42-52; fig. 2 shows how many symbols are interleaved into one data burst and inherently determines the symbol rate) that minimizes an error rate (see col. 1, line 58) based on a channel variation speed and a relative delay time of multipaths (see col. 8, lines 14-20; "fading rate" and "delay spread"); and

a transmitter that transmits data by radio based on said determined symbol rate (see fig. 1, component 12).

Regarding **claim 19**, Takeuchi teaches a transmitting apparatus (see fig. 7, component 71) used in a mobile communication system to transmit a signal by radio to a communicating party (see col. 1, line 13), the transmitting apparatus comprising:

a symbol rate determiner that determines a symbol rate (see fig. 1, component 25; "INTERLEAVING PARAMETERS", and col. 5, lines 42-52; fig. 2 shows how many symbols are interleaved into one data burst and inherently determines the symbol rate) that minimizes an error rate (see col. 1, line 58) based on a channel variation speed and a delay profile (see col. 8, lines 14-21); and

a transmitter that transmits data by radio based on said determined symbol rate (see fig. 1, component 12).

Regarding **claim 29**, Takeuchi teaches a transmitting (see fig. 7, component 71) method used in a mobile communication system to transmit a signal by radio to a communicating party (see col. 1, line 13), the method comprising:

detecting a channel variation speed between transmission and received signal (see fig. 1, component 24, col. 6, lines 38-44); and

determining a symbol rate of a transmitting signal (see fig. 1, component 25; "INTERLEAVING PARAMETERS", and col. 5, lines 42-52; fig. 2 shows how many symbols are interleaved into one data burst and inherently determines the symbol rate) having a reception of a best error rate characteristic (see col. 1, line 58) from the channel variation speed and relative delay times of multipaths (see col. 8, lines 14-21).

Regarding **claims 30**, Takeuchi teaches a transmitting (see fig. 7, component 71) method used in a mobile communication system to transmit a signal by radio to a communicating party (see col. 1, line 13), the method comprising:

detecting a channel variation speed between transmission and received signal (see fig. 1, component 24, col. 6, lines 38-44); and

determining a symbol rate of a transmitting signal (see fig. 1, component 25; "INTERLEAVING PARAMETERS", and col. 5, lines 42-52; fig. 2 shows how many symbols are interleaved into one data burst and inherently determines the symbol rate) having a reception of a best error rate characteristic (see col. 1, line 58) from the channel variation speed and a delay profile (see col. 8, lines 14-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kleider et al (US. 6,240,282; hereinafter "Kleider") in view of Sklar (IEEE Communication Magazine, July 1997; hereinafter "Sklar") and Souchay (US. 4,479,252; hereinafter "Souchay")

Regarding **claim 21**, Kleider et al teach a transmitting apparatus (see Kleider et al, fig. 13, component 114) used in a mobile communication system to transmit a signal by radio to a communicating party (see Kleider et al, fig. 13, components 116 and 118), the transmitting apparatus comprising:

a symbol rate determiner that determines a symbol rate of a transmitting signal (see Kleider et al, fig. 13, component 312, col. 19, lines 57-58 and 61-65) based on a channel condition between transmission and reception of a received signal (see Kleider et al, col. 19, line 66- col. 20, line 1); and

a transmitter that transmits data by radio (see Kleider et al, fig. 3, component 114) inherently based on said determined symbol rate (see Kleider et al, fig. 3, components 304, 306, and 312; and col. 19, lines 61-65).

Kleider et al fail to teach that wherein said symbol rate based on a channel variation speed between transmission and reception of a received signal and said symbol rate being made greater in response to an increase in the channel variation speed so as to make a channel variation between symbols or in a burst relatively minute.

Sklar teaches a symbol rate based on a channel variation speed between transmission and reception of a received signal (see Sklar, page 102, first col., lines 6-8) and said symbol rate being made greater in response to an increase in the channel variation speed (see Sklar, page 106, first col., under "MITIGATION TO COMBAT FAST-FASTING DISTORTION", fourth and fifth lines) so as to make a channel variation between symbols relatively minute (see Sklar, page 103, first col., lines 21-25).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Kleider et al and the teaching of Sklar in order to improve communication quality and mitigate channel fading.

However, the combination of Kleider and Sklar still fails to teach that wherein said transmitter transmits a signal only in a period of a high received signal level.

But, Souchay teaches a transmitter transmits a signal only in a period of a high received signal level (see Souchay, col. 3, lines 24-29).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Kleider and Sklar with the teaching of Souchay in order to avoid transmitting undesirable signals and detect noise in the communication (see Souchay, col. 1, lines16-25).

Allowable Subject Matter

Claim 17 is allowed.

The indicated allowability of claims 18, 19, 21, 29 and 31 are withdrawn in view of the newly discovered reference(s) to Takeuchi et al. (US. 5,907,563; hereinafter Takeuchi) and Souchay et al. (US. 4,479,252; hereinafter "Souchay")

Rejections based on the newly cited reference(s) follow.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wen Huang whose telephone number is (571) 272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

wwh

WH
7/11/05

LEE NGUYEN
PRIMARY EXAMINER